Uniform Course of Study

FOR THE

Commissioned, Certified and Accredited High Schools Of Indiana

---

Issued by the Department of Public Instruction

CHAS. A. GREATHOUSE
State Superintendent of Public Instruction

1911-1912

UNIFORM COURSE OF STUDY

FOR THE

Commissioned, Certified *and* Accredited High Schools

OF INDIANA

Adopted by the State Board of Education

AND

Published by the Department of Public Instruction

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STATE BOARD OF EDUCATION.

1911.

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HIGH SCHOOL STANDARDS.

THE LAW.

(Approved March 9, 1907. In force April 10, 1907.)

Common Schools Defined—High school courses. 1. The public schools of the State shall be and are defined and distinguished as (a) elementary schools and (b) high schools. The elementary schools shall include the first eight (8) years of school work, and the course of study for such years (that) which is now prescribed or may hereafter be prescribed by law. The commissioned high schools shall include not less than four (4) years' work following the eight years in the elementary schools. The high school course in noncommissioned high schools shall be uniform throughout the State and shall follow a course to be established and amended or altered from time to time as occasion may arise, by the State Board of Education.

High School Studies. The following enumerated studies shall be taught in all commissioned high schools throughout the State, together with such additional studies as any local Board of Education may elect to have taught in its high school: Provided, That such additions shall be subject to the revision of the State Board of Education. Mathematics: Commercial arithmetic, algebra, geometry. History: United States, ancient, medieval or modern. Geography: Commercial or physical. English: Composition, rhetoric. Literature: English, American. Language (foreign): Latin or German. Science: Biology, physics or chemistry. Civil government: General, state. Drawing. Music.

ACTION OF STATE BOARD OF EDUCATION.

In harmony with the provisions of the above law, the State Board of Education has authorized the in-

troduction of Agriculture, Manual Training, Sewing, Cooking, Domestic Science and Domestic Economy into the noncommissioned high schools of the State and has approved their introduction into the commissioned high schools.

High Schools.

I. COMMISSIONED. Commissions are issued by the State Board of Education to high schools upon inspection, provided they meet the following requirements:

a. Equipment.

1. Building.—The building must be of size sufficient to meet the needs without crowding, it must be properly heated and lighted, and it must have sanitary toilets.

2. Library.—The library must be equipped with good trustworthy encyclopedias, reference books and books on general literature.

There must be enough books to meet the legitimate needs of good school work. The library must be a growing one, additions being made each year.

3. Laboratories.—The laboratory must be fully equipped to do well the sciences taught in the school. The laboratory, like the library, must grow each year.

b. Teaching and Teachers.

1. Teaching.—The teaching in the high school and also in the grades below the high school must be good.

2. Teachers.—At least two teachers must give all their time to high school work. One of the teachers in the high school must be a graduate of a college course that requires at least three full years of work beyond graduation from a commissioned high school.

c. The Course of Study.

1. Length.—The minimum length of the course is thirty-two months.

2. Subjects.—The course of study must provide for the subjects legally necessary, and such other subjects as local authorities deem advisable.

3. Continuity.—A few studies pursued one, two or three years are preferable to many studies taken for short periods. No science should be taught for a term of less than one year.

4. Music and Drawing.—Provision must be made for systematic instruction in each of these subjects for one period a week or the equivalent throughout the course.

5. College Entrance.—All courses that prepare for college should provide for at least three years of foreign language.

d. Records.

1. Work.—Complete records must be kept, showing the academic progress of each pupil.

2. Advanced Standing.—When a pupil is admitted from another school the record must show what standing was given and why.

II. Certified. The requirements for a certified school are exactly the same as for a commissioned school except that in the former the minimum length of the course is twenty-eight months.

III. Accredited. Every child in the state is entitled to free school privileges in both elementary and secondary schools. School trustees are required to furnish the opportunity for such training. When no high school privileges are offered by a corporation the trustee must grant transfers to pupils eligible to attend high school when requested to do so.

There is a large number of noncommissioned high schools in the State which are doing excellent work. In order that they may accomplish much good, and to

obviate the burden of indiscriminate transfers, the following plans are recommended:

1. The principals of all the high schools in a county, both commissioned and noncommissioned, should meet and arrange a course of study for the noncommissioned high schools which will enable pupils to do two or three years' work in the noncommissioned high schools, receive full credit for time spent and work done, enter a commissioned high school and complete the entire course in the same length of time that would have been required if all the work had been done in a commissioned high school.

This arrangement, of course, would be possible only when the term of the noncommissioned high school is for eight months or more.

2. In noncommissioned high schools having terms of less than eight months arrangements should be made to have all high schools in the county begin at the same time, and the work of the noncommissioned high schools should be so arranged that the pupils can do six or seven months' work in the home school, receive a transfer to a commissioned high school and complete the year's work there.

Either of the foregoing plans will have the approval of the State Board of Education and such noncommissioned high schools, upon request, will be granted certificates of equivalency recognizing their work as the equivalent of that of a commissioned high school.

3. In counties where coöperation as outlined above is not easily affected, the work of noncommissioned high schools which maintain satisfactory standards will receive from the State Board of Education certificates of equivalency recognizing the work done as the equivalent of the same amount of work done in a commissioned high school. In schools where one teacher does all the high school work, not more than two years' work should be included in the course.

COURSE OF STUDY.

First Year.	Second Year.	Third Year.	Fourth Year.
English.	English.	English.	English.
Latin or German.	Latin or German.	Latin or German.	Latin or German.
History, Greece, one-half year. Rome, one-half year.	History, Mediaeval, one-half year. Modern, one-half year.	History, American, one-half year. Civil government, one-half year.	Agriculture and general chemistry.
Algebra.	Algebra, Plane Geometry.	Plane and Solid Geometry.	Commercial Arithmetic.
Botany or Zoology.			Physics or Chemistry. Physical or Commercial Geography. Geology.
*Agricultural Botany.	*Farm Crops and Horticulture.	*Soil and General Physics.	*Animal Husbandry and Dairying.
Music, one period per week.	Music, one period per week.	Music, one period per week.	Music, one period per week.
Drawing, one period per week.	Drawing, one period per week.	Drawing, one period per week.	Drawing, one period per week.

*A suggested course in Agriculture which may be taken in place of science. This course may be substituted for foreign language if pupil is not preparing for college.

NOTES

The State Board of Education, at its meeting May 14, 1908, adopted the following resolutions:

"That it is the sense of the board that the law enumerating the studies which shall be taught in commissioned high schools is to be interpreted to mean that competent teachers of these branches must be regularly employed and prepared to teach the same to all pupils who may express a desire to receive such instruction. The intent of the law is not satisfied by declaring that there are no pupils in these subjects when no teacher has been previously employed. It is the duty of the schools to offer instruction in all of the subjects required by law. The question as to whether pupils elect to pursue studies is to be determined subsequently to and not in advance of the organization of the school curriculum."

"That the subjects of Agriculture, Zoölogy, Chemistry, and Soil-analysis should be accepted as the equivalent of the work in Latin at present required, but a teacher must be employed who is competent to teach Latin as the subject offered, in compliance with the State law."

ENGLISH.

LITERATURE.

Discussion.

The purpose of instruction in English is to teach the pupil how and what to read, how to talk and write; to cultivate in him a desire to read widely and wisely; and to foster a desire to talk and write effectively.

The pieces of literature read in the course should be of interest and should be graded to suit the growing comprehension of the pupils. In addition to the works selected for classroom study, lists of attractive books for home reading should be put before pupils. When these lists have been well chosen with due regard to the kind of books which pupils of high school age like to read rather than with regard to what grown persons think pupils ought to read, the pupils may, if the classroom work has been skillfully done, be led to read widely.

In the classroom study the teacher must remember that the selections in use were not written for children. Therefore some things will have to be pointed out and explained. Also, the teacher should determine what simple, definite end he will try to make these selections accomplish. In securing this end thoroughness is essential, but to be thorough one need not be exhaustive.

Every masterpiece should be read and studied as a whole. Let the pupil get his first impression of poem, novel, or drama, in a normal way; let him read it as he reads anything out of school. Then let the study of the selection follow, but before the class leaves it, let the thought be centered again on the masterpiece as a whole. By this means much will be avoided that tends to turn away pupils from reading again the

authors studied in school. In addition much will be done to secure this same end if the teacher cultivate in himself an appreciation of the books he must teach. Then his teaching will have a vitality and an enthusiasm that will be contagious.

The masterpieces in the course that follows have been chosen in accordance with the principle stated above. They have been placed in the course with due thought to the appeal they will make to the interest and comprehension of the pupil. And not only have such books been chosen, but an order proved by experience has been suggested.

The Course.

First Year.

FIRST HALF.

Irving's "Sketch Book."
Longfellow's "Tales of a Wayside Inn" and other narrative poems.
Dickens's "Christmas Carol" and "Cricket on the Hearth."

SECOND HALF.

Arnold's "Sohrab and Rustum."
Tennyson's "Enoch Arden."
Shakespeare's "Merchant of Venice."

Second Year.

FIRST HALF.

Lowell's "Vision of Sir Launfal."
Scott's "Ivanhoe."
Goldsmith's "The Deserted Village."

SECOND HALF.

Scott's "Marmion."
George Eliot's "Silas Marner."
Shakespeare's "Julius Cæsar."

Third Year.

first half.

Shakespeare's "As You Like It."
Addison's "Sir Roger de Coverley Papers."
Macaulay's "Life of Samuel Johnson."

second half.

Curtis's "The Public Duty of Educated Men."
Tennyson's "Idylls of the King."
Dickens's "Tale of Two Cities."

Fourth Year.

Browning—Selected poems. (See list below.)
Coleridge's "The Rime of the Ancient Mariner."
Washington's "Farewell Address," and
Lincoln's "Gettysburg Address."
Webster's "First Bunker Hill Oration," or
Burke's "Speech on Conciliation with America."
Shakepeare's "Macbeth."

(In this year a part of the literature time may be given to a study of the history of English Literature. Such study, however, should be illustrated by the reading of extracts from the various authors, such as may be found in Palgrave's "Golden Treasury" and similar collections of poetry and prose.)

Note.—It is suggested that the following poems of Browning be studied in the order named:

"Incident of the French Camp," "Herve Riel," "How They Brought the Good News from Ghent to Aix," "The Pied Piper of Hamelin," "Cavalier Times," "The Boy and the Angel," "My Star," "Love in a Life," "Life in a Love," "Home Thoughts from Abroad," "Home Thoughts from the Sea," "Up at a Villa," "Down in the City," "Never the Time and the Place," "Evelyn Hope," "The Last Ride Together," "Two in the Campagna," "By the Fireside," "The Lost Leader," "Andrea del Sarto."

COMPOSITION.

The aim in composition, as said above, is to teach the pupil to talk and write, and to cultivate in him the desire to talk and write effectively. These two ends the teacher must never forget. He must remember also that as the desire in the pupil to express himself effectively grows, so his ability to talk and write effectively will grow. This ability, however, can be acquired by the pupil only by much drill in speaking and writing throughout his school career. Therefore, at least one recitation each week for at least three years should be given to composition, but the fact must never be overlooked that every recitation and every test, no matter in what subject, is an exercise in English composition. If both pupil and teacher recognize this truth, much slovenly English would not be used by the pupil or tolerated by the teacher.

In cultivating the desire to speak and write, the study of literature is a powerful influence. This does not imply that many topics for essays may be taken only from literature. More important than this is the need that literature awaken the thoughts and the emotions of the pupil, which must always be the basis of the expression. The keener the pupil is to see and feel, the more he will have to express; so it is the business of the teacher of composition to widen the range of the pupil's sources of expression.

The pupil's subjects will come from two sources, his experience and his reading. Subjects taken from literature should be so worded as to prevent a parrot-like reproduction of the thoughts of the author, and at the same time to secure the best expression of the honest thoughts of the pupil, howsoever crude they may be. All subjects chosen must be simple and definite and vitally connected with the pupil's interests. If he is engrossed in his studies or his sports, he can write effectively only on some topic connected with

these interests. Hence the necessity for the teacher to keep in mind always the scope of the pupil's interests.

First Year.

1. Grammar.—Work based on the written work of the pupils.
2. Definite teaching of the sentence; grammatical construction and unity.
3. Theme writing on subjects within the experience of the pupils. These themes should be short and should be carefully corrected by the teacher.

Second Year.

1. Sentences.
2. Paragraphs—Unity, coherence, emphasis.
3. Theme writing, narrative and descriptive, short themes.

Third Year.

1. Sentences.
2. Paragraphs, relation to each other.
3. Words.
4. Themes—Mainly explanation. Narrative and descriptive writing to add variety.

Fourth Year.

1. Forms of Discourse.—More extended work in narration, description, exposition. Some simple writing of argumentation.

Notes.—The number of themes and the amount of time to be devoted to different phases of composition and literature, and the work to be done in oral composition and letter writing will be explained by the teacher.

The teacher should always be clear on the following points:

1. The method of teaching a novel, poem or essay.

2. Amount of time to be devoted to a particular work.
3. How to introduce the work to a class.
4. Supplementary aids.

ALTERNATE COURSE IN ENGLISH.

A committee from the State Board of Education, assisted by a number of English teachers in colleges and high schools, have proposed an alternate course. It is hoped that many schools will use the alternate course in whole or in part.

The list of books is larger than can be studied in the high school course. Supplementary reading may be chosen from books named in the regular course or from the list headed *Supplementary Reading.*

It is heartily recommended that the pupils be required to commit to memory selections from the poetry each semester during the high school course.

First Year.

1. Selections from Washington Irving, Charles Dudley Warner, John Burroughs, Hawthorne's *Twice Told Tales.*
2. Dickens's *Christmas Carols* and *Cricket on the Hearth.*
3. Burns's *Cotter's Saturday Night;* Whittier's *Snow Bound;* Scott's *Lady of the Lake;* Longfellow's *Tales of a Wayside Inn.*
4. Shakespeare's *Twelfth Night, Midsummer Night's Dream, Merchant of Venice; Richard III, Julius Caesar, Henry V.*
5. Stevenson's *Treasure Island.*

Second Year.

1. Lowell's *Vision of Sir Launfal;* Coleridge's *Ancient Mariner;* Tennyson's *Enoch Arden;* Scott's *Marmion;* Goldsmith's *Deserted Village.*

2. Eliot's *Silas Marner;* Scott's *Ivanhoe* or *Talisman;* Cooper's *Last of the Mohicans* or *Spy;* Dickens's *Tale of Two Cities;* Goldsmith's *Vicar of Wakefield.*

Third Year.

1. Tennyson's *Idylls of the King, Gareth and Lynette, Coming of Arthur, Geraint and Enid, Holy Grail, Passing of Arthur;* Arnold's *Sohrab and Rustum;* Burns's poems (selected); Browning's *Incident of the French Camp, Herve Riel, How They Carried the Good News, Pied Piper of Hamelin;* selections from Palgrave's *Golden Treasury.*
2. Short stories by American and British authors.
3. Macaulay's *Milton* or *Samuel Johnson;* Emerson's *Compensation;* Ruskin's *Sesame and Lilies;* Addison's *Roger de Coverley Papers;* Curtis's *Public Duty of the Educated Man;* Selections from Parkman's *Oregon Trail;* Famous Orations.

Fourth Year.

1. Study of the drama—two or three plays:
   Shakespeare's *As You Like It, Macbeth, King Lear, Hamlet, The Tempest.*
   Goldsmith's *She Stoops to Conquer.*
   Sheridan's *Rivals.*
2. Reading of novels—two or three:
   Scott's *Quentin Durward.*
   Hawthorne's *House of Seven Gables.*
   Dickens's *David Copperfield.*
   Thackeray's *Henry Esmond.*
   Stevenson's *Kidnaped.*

Supplementary Reading.

I.

Gaskell's *Cranford.*
Hughes's *Tom Brown at Rugby.*
Cooper's *Deerslayer.*
Hale's *Man Without a Country.*
Aldrich's *Story of a Bad Boy.*
Eggleston's *Hoosier Schoolboy.*

II.

Blackmore's *Lorna Doone.*
Stevenson's *Prince Otto.*
Tennyson's *Princess.*
Irving's *Life of Goldsmith.*
Alcott's *Little Women.*

III.

Lytton's *Harold, Last of the Saxons.*
Swift's *Gulliver's Travels.*
Bunyan's *Pilgrim's Progress.*
Dickens's *Old Curiosity Shop.*
Lytton's *Last Days of Pompeii.*
Ruskin's *King of the Golden River.*

IV.

Kingsley's *Westward Ho.*
Thackeray's *Pendennis.*
Palmer's *Homer's Odyssey.*
Hughes's *Tom Brown at Oxford.*
Kingsley's *Hypatia.*
Eliot's *Mill on the Floss.*
Shakespeare's *Richard III.*
Readings from Bible: *Genesis, Samuel, Ruth, Esther.*

COMPOSITION.

AIM AND SCOPE OF COMPOSITION WORK.

The aim of composition is to arouse thought and imagination, to cultivate the power of continuous, well-ordered and pleasant speech, and to help the student say simply and directly what he thinks. All students should learn to write clearly and coherently. In order that the spirit of poetry may be kept extant and that students may have a more practical appreciation of poetic construction, practice in verse-writing may be maintained throughout the four years' course.

Oral Work.

To have something to say and to desire to say it in the best possible way is the first requisite of a writer. The most rational manner to begin composition work is to learn and accept the speaking ability of the student and develop expression by means of oral exercises. If students will not talk, the task of securing interesting and well modeled written work is far greater. At least once every week a special exercise should be given in oral work. In the first and second years this work should include all the forms. Story-telling and relating of specific incidents that possess pertinent points furnish the most instructive work for the first efforts. The student should learn to explain clearly simple propositions and situations about him; should develop the essentials of good conversation by practice in the art in class-room work; should discuss in a free and natural manner questions about which there is much that he knows and much more that he wishes to know; and should recite selections from poetry and the great orations.

Subjects.

A subject should be always familiar enough to warrant the student having sufficient facts to write intelligently, and on occasions, far enough removed from everyday experience to arouse curiosity and imagination. The subject for composition should be developed before and with the class. It should be interesting enough to arouse every student in the class to a discussion of the possibilities of the proposed subject; it should create situations that are inviting, interesting, and thought-compelling. Stories half finished, a pertinent point for debate, the accurate explanation of something the class had long felt that it knew thoroughly, etc., all, if properly handled, make for interest and wholesome thinking. These subjects are found everywhere—in books, magazines and newspapers, in pictures, in the daily activities of social, civil, business and home life.

Written Work.

One carefully prepared theme should be required each week. This work should be a whole, an idea developed completely. It should not be long; it should not be verbose; there should be nothing in the theme that is not needed, and there should be nothing omitted that in the omission leaves the thought uncertain and improperly supported. No written work should be required when the instructor does not intend to criticize carefully, or is too crowded with work to treat the papers adequately and fairly. Too much written work has been made laborious and uninteresting, because the teachers have not had the time or disposition to enter thoroughly into the spirit of making their own and the student's writing better. All themes lacking the complete idea and showing opportunities for improvement should be revised and rewritten under the guidance and with the sympathetic suggestions of the teacher. More real composi-

tion improvement is gained in the rewriting than in the original production.

Coöperation of Departments.

The various departments of the high school should feel the responsibility of good English teaching. Papers from the different departments should be collected and held subject to the English teacher's criticism.

Letter Writing.

Letter writing should be a favorite and valuable form for constant use throughout the high school course because of its evident practical value, and the possibilities of composition and literary training in the writing of real letters. We are rapidly losing the art of letter writing and substituting for it the telegrapher's code. It now seems necessary to urge the writing and use of both the business form and the old-fashioned "newsy," friendly communications. Collections of letters to children show what can be done in the school room. Formal notes and all the rules pertaining to them should be taught and practiced. Rules for letter writing can be found in any reputable rhetoric, and should be used as a guide in the preparation and presentation of this subject.

Method of Approach.

In the first two years the pupils should practice all the literary forms, such as story-telling and story-writing, oral and written explanation and oration, and the simpler mechanics of poetry and the drama. The third and fourth years should present the chief characteristics of the four discourses. After the composition as a whole and the discourses are well established, specific studies of paragraphs, sentences and words, with the view of refining the theme, should be emphasized.

Criticism.

Criticism of work, both oral and written, should be made by the student himself, his classmates, the teacher, and by standard selections of literature. The best criticism of all is the interchange of ideas by the members of a class, under wise guidance, on the production of the class. The spirit of free, wholesome criticism must be inculcated, and all destructive and envious suggestions eliminated. This spirit depends on the teacher's attitude. If she is ironical and inflexible she will receive no worthy response from her class, but if she is open-hearted, free in expression, and appreciates the efforts the students must make to right their wrongs in composition, she will receive hearty coöperation.

Criticism should develop slowly and clearly through definite stages. The first efforts of the teacher should be directed toward a spirited and correct composition. Correctness has two forms that should receive specific attention—the mechanical and grammatical. Penmanship, the folding of the paper, margins, punctuation, spelling, paragraphing, etc., should all be well understood and firmly fixed in the minds of the students by constant practice. Examples for the teaching of correctness should come largely, and possibly wholly, from the composition work in the high school. From the end of the second year *clearness* should be emphasized. In the fourth year criticism should exercise a refining and polishing influence on the student's writing. This last is the subtlest aim of composition work, and should not be overdone, as it often is, when students are not adequately prepared, and the teacher has not sufficient time to develop her criticisms clearly and fully. In the third and fourth years literature may be used as specimens of the things attempted in composition, but not to the degree of making literature subordinate.

GRAMMAR.

At least one hour each week throughout the first year of the high school course should be devoted to the study of grammar. The more formal part of the work should be done in the second half of the year.

By means of frequent tests and reviews during the remaining three years of the course, the teacher should make certain that the pupil is keeping clearly in mind the knowledge of grammar which he has gained. Moreover, the teacher should insist that the pupil make habitual application of this knowledge in his oral and written expression. In all the courses in composition, he should be required to study the principle underlying the correction of every grammatical error, in order that he may develop the habit and the power of testing his own work.

Since the greatest good comes from the simpler kind of sentence-analysis, the study should be based upon the sentence as a unit. Hence it is important that within the sentence, function and relation, not rigid word-class, should be emphasized.

It is believed that every teacher should require the use of a good text-book. This may be a book devoted entirely to the essentials of grammar, or one that combines the study of grammar and rhetoric. In addition to the assignments in the text-book, there should be frequent practice in the analysis of consecutive sentences drawn from other sources.

Teachers of large experience unite in the belief that pupils need special drill in the following:

(The sentence as a unit.)

1. In distinguishing the sentence from other groups of words.
2. In classifying sentences.

(Agreement.)

1. In writing sentences in which the predicate precedes the subject when the subject is plural.
2. In the use of the verb when the subject of the sentence is a collective noun.
3. In the use of the verb with *anybody*, *everybody*, *somebody*, *either*, and *neither*.
4. In the use of the demonstratives *this*, *that*, *these*, and *those* with such words as *kind* and *sort*.
5. In the use of the pronoun when many words separate it from its antecedent.

(Case.)

1. In the use of the pronouns *who* and *whom*, *which* and *who*, and *I* and *myself*.
2. In writing (1) the possessives of nouns, and (2) possessive pronouns *its*, *hers*, *ours*, *yours*, and *theirs*.

(The verb.)

1. In the use of verbs of incomplete predication, such as *become*, *seem*, *appear*, and *feel*.
2. In the use of tenses, especially the sequence of tenses.
3. In the use of *shall*, *will*, *should*, and *would*.
4. In the principal parts of *sit*, *set*, *lie*, and *lay*.

(The noun.)

1. In the formation of plurals.

(Connectives.)

1. In the use of *different from* (not *different than*).
2. In the use of *as*, *as if*, *as though*, and *like*.

HISTORY AND CIVICS.

Considerations for the Teacher.

The pupils should be required to make topical outlines of the lessons, and to write these up in *permanent note-books*, together with such other matter as the teacher may suggest.

Constant *use of the map* in the text and elsewhere should be required, and from time to time the pupils should be required to fill in outline maps, showing physical features, political boundaries, location of cities, battles, etc. In no other way can a knowledge of the history be so well connected with the geography of the different countries, and the influence shown of one upon the other.

Extensive *collateral reading* should be required in the school library and in such other collections as the pupils have access to. Such reading is necessary to familiarize the pupils with the use of books and also to lead them to see that all history is not contained within the limits of their texts. The copying into the note-books of significant passages found in the collateral reading should be encouraged, and from time to time oral or written reports should be made in class on the reading.

The preparation of short essays or written reports is an excellent means of correlating the work in history and English. In such reports it is highly desirable to require the pupil to state exactly (by author, title volume, and page) where he got his information.

Accuracy as to fact and accuracy of statement should be required throughout, while at the same time the teacher makes sure that the pupil really *understands* what he reads and recites. Lead him to penetrate back of the narrative to the things themselves—to realize, *visualize* events. Let him see that

history deals with real men and women, living in a real world, with physical needs, passions, ambitions, aspirations like our own.

Two means to this end are—(1) the occasional use for illustrative purposes of extracts from original sources, and (2) the use of pictures. A letter from a crusader to his loved ones at home, or an account by an eye-witness of some stirring event, will help greatly in making the history real; and good collections of sources are now cheap. Pictures of historical places, things and persons, can easily be obtained from old magazines and similar sources, and should be mounted on uniform sheets of cardboard and classified. Older pupils usually will gladly aid in making and keeping such a collection, and its value will grow from year to year.

The following books are valuable aids for the teacher: *A History Syllabus for Secondary Schools; The Study of History in Schools; Report of the Committee of Seven; Historical Sources in Schools; Report to the New England History Teachers' Association.* Outline maps and map books.

The Course.

First Year's Work.

History of Greece (first half year).
History of Rome (second half year).

TEXT-BOOKS.

Botsford's "Ancient History for Secondary Schools."
Goodspeed's "History of the Ancient World."
Morey's "Ancient History."
Myers's or Botsford's "History of Greece."
Myers's or Botsford's "History of Rome."
Robinson's "First History of Rome."
West's "Ancient World."

Before taking up a text-book on the history of Greece a few oral lessons should be given, supplemented by collateral reading, upon the history of the

more important Oriental nations. It should be shown:

1. That the beginnings of the world's civilization were in the Nile and Tigris-Euphrates valleys—in Egypt and Chaldea.

2. That the mission of the Hebrews was to teach a monotheistic religion.

3. That the Phoenicians were the merchants, navigators, and colonizers of the ancient Oriental world, and thus became, incidentally, the disseminators of civilization.

4. That the Persians were the empire builders of the ancient East.

A brief survey of the contributions of these five nations will constitute a very satisfactory introduction to the history of the classical countries. In case a text-book on ancient history be used, the above oral lesson will not be necessary.

Second Year's Work.

MEDIAEVAL AND MODERN HISTORY.

This work should be devoted in large part to the great developments of European history, such as the migrations of the nations, feudalism, the Church, the Crusades, struggles of Papacy and Empire, the rise of modern states, the Renaissance, the Reformation and the wars of religion, the French Revolution, the unification of Italy and Germany, etc. Because of its importance for American history, emphasis should be laid on the history of England, especially in the sixteenth, seventeenth and eighteenth centuries.

The work should be so planned as to leave abundant time for the latter part of the modern period. The history of the French Revolution, and of the nineteenth century, is of equal if not greater importance than any other part of the course. Particular attention should be given to the industrial and social

history of recent times, out of which grow the problems which the present age is called upon to solve.

TEXT-BOOKS.

Bourne's "Mediaeval and Modern History."
Harding's "Essentials in Mediaeval and Modern History."
Myers's "Mediaeval and Modern History" (revised ed.).
Robinson's "History of Western Europe."
West's "Modern Europe."

THIRD YEAR'S WORK.

American History and the Civil Government of the United States and of Indiana (whole year).

TEXT-BOOKS.

(a) American History:
Ashley's "American History."
Channing's "Students' History of the United States."
Hart's "Essentials in American History."
McLaughlin's "History of the American Nation."
Woodburn and Moran, "American History and Government."

(b) Civil Government:
Ashley's "American Government."
Fiske's "Civil Government in the United States."
Forman's "Advanced Civics."
James & Sanford's "Government in State and Nation."
Strong & Schafer's "Government of the American People."

For a study of the government of Indiana the books by Professors Rawles and Hodgin will be found satisfactory.

One great function of the public school is to produce an intelligent citizenship, to enable the individual to establish properly his civic relationship. A knowledge of our civil government does not necessarily contribute any more to this real civic end than a knowledge of the facts dealt with in other studies. The whole course of study and the whole school life should contribute to this end. But where the civic aspect of education is so important, the pupil's civic training should not be left wholly to the incidental inference to be derived from the several subjects of instruction. He should early and constantly have his attention directed definitely to the civic relations as such. He should be led to form the habit of thinking of his own life and conduct in their relations to the community life about him. He should have systematic instruction in regard to the nature and meaning of the community life of which he is a part; in regard to the meaning and relations of the fundamental institutions of his community, such as the family, the school, the industrial organization, the government; with regard to the services performed for him by these institutions, and with regard to his responsibility as a member of this community. Government should be a part of this study, not in the details of its mechanism, but in its essential relations to the life of the community and of the individual. This study of the civic relations should rest directly upon the pupil's own observation and analysis of the community in which he lives; his study should be of his community and of his relations to it. His first ideas may be gained from observations of the family, of the school, of the neighborhood, of which he is a member, gradually extending his observations to the larger local community, and then to the State and Nation.

In the fourth year it is desirable that the work in American History and Civil Government be as closely correlated as possible. Thus the study of the text of the Articles of Confederation and of the Constitution

should come in connection with the study of their historical setting. The development of American institutions from their English origins should be pointed out.

The following list of books in addition to the leading high school texts would constitute a good working library in History:

(a) General:
- Larned's "History of Ready Reference and Topical Reading."
- Ploetz's "Epitome of Universal History."
- Dow's "Atlas of European History."

(b) Oriental History:
- Ragozin's "Story of Chaldea."
- Rawlinson's "Story of Egypt."
- Hosmer's "Story of the Jews."
- Rawlinson's "Story of Phoenicia."

(c) Greek History:
- Bury's "History of Greece."
- Oman's "History of Greece."
- Holm's "History of Greece."
- Fling's "Source Book of Greek History."
- Gladstone's "Homer."
- Mahaffy's "Old Greek Life"; "Survey of Greek Civilization."
- Guhl and Koner's "Life of the Greeks and Romans."
- Jebb's "Greek Literature."
- Translations of Homer's "Iliad" and "Odyssey."

(d) Roman History:
- Shuckburgh's "History of Rome."
- Monroe's "Source Book of Roman History."
- Plutarch's "Lives."
- Johnston's "Private Life of the Romans."
- "Epochs of Ancient History."
- Wilkin's "Roman Antiquities."
- Tozer's "Classical Geography."

Bury's "Students' History of the Roman Empire."

(e) Mediaeval and Modern History:

Emerton's "Introduction to the Study of the Middle Ages."
Emerton's "Mediaeval Europe."
Adams' "Civilization During the Middle Ages."
Munro and Sellery's "Mediaeval Civilization."
Archer and Kingsford's "The Crusades."
Eginhard's "Charlemagne."
Thatcher & Schwill's "Europe in the Middle Ages."
Subohm's "Era of Protestant Revolution."
Gardiner's "Thirty Years' War."
Gardiner's "French Revolution."
Robinson's "Reading in European History."
Mathew's "French Revolution."
Henderson's "Short History of Germany."
Johnstone's "Napoleon Bonaparte."
Fyffe's "Modern Europe."
Robinson and Beard's "Development of Modern Europe."

(f) French History:

Rose's "Revolutionary and Napoleonic Era."
Lowell's "Eve of the French Revolution."
Morris' "French Revolution."
Duruy's "History of France." (One volume edition.)

(g) English History:

Green's "Short History of the English People."
Gardiner's "Students' History of England."
Terry's "History of England."
Goldwin Smith's "Three English Statesmen."
McCarthy's "History of Our Own Times."
Cheyney's "Industrial and Social History of England."
Cheyney's "Readings in English History."
Ogg's "Source Book of Mediaeval History."

Robinson and Beard's "Development of Modern Europe" (2 vols.).

Robinson and Beard's "Readings in Modern European History" (2 vols.).

(h) American History:

Longman's "Epochs of American History."

Higginson and MacDonald's "History of the United States."

Edward Eggleston's "Transit of Civilization."

Edward Eggleston's "Beginners of a Nation."

George Cary Eggleston's "Our First Century."

George Cary Eggleston's "Life in the Eighteenth Century."

Fiske's "Discovery of America."

Fiske's "Beginners of New England."

Fiske's "Critical Period of American History."

Scribner's "American Historical Series."

Parkman's "Historical Works."

The "American Statesmen Series."

Johnston and Woodburn's "American Orations."

McMaster's "History of the People of the United States."

Rhodes' "History of the United States."

Hart's "Source Book of American History."

Dunn's "Indiana."

(i) Civil Government:

Bryce's "American Commonwealth."

Woodburn's "American Republic."

Benjamin Harrison's "This Country of Ours."

Hinsdale's "American Government."

Dunn's "The Community and the Citizen."

Hart's "Actual Government."

Dole's "American Citizen."

The "American State Series."

The "Statesman's Year Book."

The "World Almanac."

"The Review of Reviews."

LANGUAGES.

LATIN.

The Course.

First Year—The Elements.
Second Year—Caesar (or the equivalent).
Third Year—Cicero.
Fourth Year—Vergil.

Discussion.

The first end aimed at in the study of Latin should be ability to read the language intelligently and at a fair pace. With this attained other great advantages, certain to be derived from the study, will take care of themselves. The pupil should be made to feel from the start that with a reasonable expenditure of time, energy, and with fair ability (good teaching being presupposed) he can learn to read Latin of average difficulty as he learns to read other languages than his own. To secure proper results the study should be continuously pursued through four years, of which a full year should be devoted to the study of the Elements, a full year each to Caesar (or the equivalent), to Cicero and to Vergil. In the case of a three years' course, Vergil should be omitted.

FIRST YEAR.

In the study of the Elements, while the use of a good book is most desirable, it should never be overlooked that the chief factor that makes for success is the teacher himself. He will recognize that during this year pronunciation must be taught, the inflections mastered, and the more common constructions of syntax studied, to the end that the pupil shall secure a vocabulary of five hundred or more words and acquire an ability to translate extempore easy prose sen-

tences written in that vocabulary. He will supplement oral recitation and drill by the use of the blackboard for daily review of paradigms and still see that the English sentences of the exercises are turned into Latin no less than are the Latin turned into English. Absolute mastery of the Elements should be insisted upon. It is grossly unfair to the pupil and inconsistent with any subsequent success in his efforts to learn to read Latin to pass him out of this first year's work, until he has a working knowledge of it.

SECOND YEAR.

The second year should be devoted largely to the study of Caesar. While the first four books are usually read, the teacher will find it an advantage occasionally to substitute parts of the other books. In case some book of Latin selections, so graduated as to serve as an introduction to the more difficult Latin of Caesar, is used—and such a book is in only rare cases to be recommended—at least the latter half of the year's reading should be devoted to the Caesar in the book. If Latin is to be studied to be read, the teacher should in a very definite way show his pupils how to translate, and with this in view all through the year there should be much literal translation of the advance lesson in the class-room. But in the daily review, in addition to the customary drill on forms and syntax, strictly idiomatic English should be insisted upon in translation. If Latin is to maintain its place in the educational curriculum, "teachers must teach." Pupils should be required to translate in class from class-texts owned by the school (publishers generally supply such texts gratis) ; they should understand that in order to receive credit in their work they must, in quizzes and final examination on any author that the class may read, show ability to translate at sight passages previously unseen. To insure a systematic study of syntax, Latin composition should be continued through

this and the following year. A text-book is recommended (such as Jones', or Bennett's, or Barss') that will make possible the definite study of the various constructions and peculiarities of syntax, rather than a book in which the exercises are "based upon" some author, like Caesar. There should be at least one recitation each week in Latin writing, and it is recommended that a considerable portion of each of these class exercises be devoted to *extemporalia*, that is, the turning into Latin of English sentences that have not been previously assigned, but which illustrate the principles of the lesson of the day. (It goes without saying that the exercises assigned for outside preparation will be corrected and returned to the pupil.) The final examination test should use no sentences that have previously been used by the class, care being taken to supply *new* word meanings.

THIRD YEAR.

Of Cicero the four orations against Cataline should be first read, to be followed by one or more of the longer speeches.

FOURTH YEAR.

The fourth year should be devoted to Vergil's Aeneid. Whether or no the Latin writing is continued during this year, some knowledge of classical Mythology is necessary to an appreciation of Vergil. Francillon's "Gods and Heroes" or Gayle's "Classical Myths" may be used. It need hardly be said that the metrical reading of the text should be taught from the start.

LIBRARY.

A working library of serviceable books is as essential to the first-rate teaching of Latin as is apparatus to the teaching of science. Fifty dollars will suffice to make a fair start in the building up of such a library. A "List of Books Recommended for a High

School Classical Library by a Committee of the Michigan Schoolmasters' Club," edited by C. L. Meader. will be of use to purchasers. This library should contain copies of the school Latin grammars in common use, Harper's Latin Dictionary and Lewis' Latin Dictionary for Schools, dictionaries and hand-books on classical antiquities and literature, illustrated books on the city of Rome, some text-books on the history of Rome, including lives of Caesar and Cicero. Schreiber's "Atlas of Classical Antiquities" and Gow's "Companion to School Classics" are almost in a class by themselves, and Johnston's "Latin Manuscripts" has much that will interest high school pupils.

AIDS IN TEACHING.

No reasonable pains should be spared to make the teaching of Latin attractive as well as effective. The class-room ought to be made as beautiful as possible by pictures and plaster casts—they cost relatively but little—and by good wall maps. Excellent lantern slides may be had, by means of which almost every phase of antiquity may be illustrated. In many schools Latin clubs, which demand the outlay of no money at all, have been of great value to teachers and pupils alike.

GERMAN.

The Course.

First Year—Grammar and Reader.

Second Year—Grammar, Conversation and Reading.

Third Year—Conversations and Readings.

Fourth Year—Advanced Readings. (For details see Discussion.)

Discussion.

Little encouragement should be given the student to take up the work in German unless he expects to continue it for at least three years. A single year of German has no very great value.

In the three or four years the student should master the principles of grammar and acquire so much of a vocabulary as will enable him to read not too difficult German with some ease and fluency and to understand when spoken to, as well as express himself in a simple way in the foreign idiom. Some of the time often spent in translation might well be given to conversational exercises and the construction of simple sentences.

Constant drill in reading at sight and from dictation should be given so that the student may be impressed that it is not so much any one book that he is studying as a language. The pronunciation should be carefully watched, especially during the first year, to guard against a careless and slovenly pronunciation.

Too much stress can hardly be laid on the continued review of grammatical principles.

An outline of the work, arranged by years, would be as follows:

FIRST YEAR.

The first year should be given to the systematic study of the Grammar or some introductory book, such as Joynes-Meissner's "German Grammar"; "German Lesson Grammar." Jones and Wesselhoelft; "Lehrbuch der Deutchen Sprachen," Spanhoofd; Thomas's "Practical German Grammar"; Becker's "Elements of German"; Bacon's "New German Course."

The reading should be begun as early as possible in some such book as "German Stories Retold," Kern, and continued in Storm's "Immensee."

SECOND YEAR.

In the second year, the Grammar should be continued throughout the year, at least once a week, and in addition "Hoher als die Kirche, Hillern; Willkommen in Deutschland," Mosher, and "Das Edle Blut," Wildenbruch, should be carefully read and conversation in German based on the text carried on daily." "Carruth's Reader."

THIRD YEAR.

For the third year, as texts to be read and used as a basis for conversation, the following are desirable: "Flachsmann als Erzieher," Ernst; "Die Jungfrau von Orleans or Maria Stuart," Schiller, and "Die Journalisten," Freytag. Bronson's "Colloquial German" should be used once a week throughout the year.

FOURTH YEAR.

In the fourth year, when offered, the student should come to know Goethe by reading "Herman and Dorothea," Palmer, and Lessing by the study of "Minna von Barnhelm," Wilson. Some prose work, such as "Der Katzensteg," Sudermann, should also be read. "Prose Composition," Pope, is a good book for this year.

AIDS.

An abundance of dictionaries should be at all times of easy access. Thieme-Preusser, Flügel, Flügel-Schmidt-Tanger, and Cassel are excellent.

Magazines, preferably illustrated, and newspapers should be placed in the hands of the students, and a Conversation Club will also be of great service to keep the pupils alert and interested.

FRENCH.*

1. A standard course in elementary French, with exercises in composition, and the reading of L'Abbe Constatin and kindred selections from French literature.
2. Continue the study of French Grammar, and read Madam Therese, Copper et Maupassant, and Contes de Daudet.
3. French composition, and reading of Hugo's Hernani, Moliere's Le Burgeois Gentilhomme, and Racine's Athalie.

*Course outlined by the City Superintendents' Association.

GREEK.*

1. A beginner's book, followed, if time permits, by the reading of easy selections from Xenophon.
2. Three or four books of the Anabasis, or two of the Anabasis and two of the Hellenica, with plentiful exercise in prose composition and some study of Greek history.
3. Three or four books of Homer, either Iliad or Odyssey, with careful study of forms and the heroic meter, and a general view of Greek literature.

MATHEMATICS.

The Course.

First Year—Algebra.

Second Year—Algebra, half year; geometry, half year.

Third Year—Geometry completed, plane and solid.

Fourth Year—Commercial Arithmetic, half year.

Some teachers prefer the following arrangements:

First Year—Algebra.

Second Year—Geometry, plane.

Third Year—Algebra, half year; solid Geometry, half year.

Fourth Year—Commercial Arithmetic, half year.

ALGEBRA.

Discussion.

This course should consist of one school year (eight months) of daily recitations devoted to a mastery of algebraic notation, fundamental processes, factoring, fractions, simple equations, easy quadratic equations, and simple simultaneous equations with two unknowns. The work of the entire course should be grouped about the solution of problems by equations.

*Course outlined by the City Superintendents' Association.

Emphasis should be placed upon the processes of thinking involved rather than upon mere manipulation of abstract numbers. As far as possible, the problems used should be of a practical character; in particular, the course in algebra should be made a means of maintaining and increasing efficiency in the arithmetical processes.

1. The first work should be literal arithmetic with application in the solution of equations.

2. Thereafter equations (and all other processes) should be reviewed and used constantly.

3. In the solution of equations do not place the emphasis upon "transposition" and "clear of fractions"; rather have the pupils use the fundamental processes in solving equations. *"Transposition" and "clear of fractions" should not be used at all during the first part of the course.* In problems use other letters as well as "x," "y" and "z" for the unknown quantity. Check equations.

4. *Fundamental Processes.*

Introduce these processes by means of the related topics in arithmetic. Omit all expressions containing general or fractional exponents and complicated coefficients. In division give some problems having a remainder. Give problems requiring rearrangement of the terms. Give sufficient drill to insure rapidity and accuracy in problems involving simple number combinations.

5. *Special Products and Factoring.*

During the first year teach only the simpler types, selecting the ones commonly used in solving quadratic equations. Omit also the generalized forms such as: $(3x+2y)^2-(2x-y)^2$. Take up together the multiplication and factoring forms for each type. Give arithmetical applications where possible. Try to give immediate application of these types in fractions and equations. Give much quick mental drill to develop a high degree of rapidity and accuracy in the simple

forms. Inductive development is particularly good in this section.

6. *H. C. F.; L. C. M.; Fractions.*

Develop these topics out of the related topics in arithmetic. Omit the Euclidian method of finding the H.C.F. Omit all complicated problems in fractions. Emphasize the thought process involved; i. e. instead of "cancellation" dwell upon "division of the numerator and the denominator by the same number."

7. *Linear Simultaneous Equations.*

If any graphical work is used, it should precede the topic. Omit problems with more than three unknowns. Have pupils understand the three common forms of elimination, but dwell upon the "addition-subtraction" method.

8. *Square Root; Radicals; Imaginaries.*

Do not teach all of the chapters on evolution, radicals, imaginaries, and exponents. Select for the first year only such parts as are required for the complete solution of quadratic equations; i. e. square root of polynominals and numbers, simplification of surds of the form $\sqrt{12}$ and $\sqrt{\frac{2}{3}}$.

For this, all that is required is a discussion of $\sqrt{ab}$ and $\sqrt{\frac{a}{b}}$.

Omit cube root.

9. *Quadratic Equations.*

Teach the "factoring" and "completing the square" methods. Teach only one way to "complete the square." Omit simultaneous quadratics, special higher equations, radical equations, the theory of quadratics. Introduce the subject graphically.

The second year's work should include the following subjects:

1. Further study of factoring.

2. Further study of quadratics, including the formula method of solution and the theory of quadratics.

3. Simultaneous quadratics with two unknowns. Omit those with more than two unknowns. Give graphical introduction to simultaneous quadratics if possible.

4. A brief discussion of radicals, imaginaries and exponents.

5. Radical equations, special equations of higher degree. Omit complicated ones.

6. Binominal theorem for positive integral exponents and progression if possible.

Practical problems.

In general select concrete rather than abstract problems, giving the preference to interest, geometry, percentage, physical, chemical, and other practical problems, instead of the "age," "hare and hound," "cistern," etc., types. Give much drill upon the use of formulae.

GEOMETRY.

The work in Geometry should aim to accomplish these results:

1. Familiarity with the common geometrical figures and the theorems relating to them.

2. Ability to construct such figures accurately with rule and compass.

3. Reasonable appreciation of deductive reasoning and reasonable resourcefulness in applying deductive processes to the solution of exercises of moderate difficulty.

4. Reasonable appreciation of the untility of geometry.

To do this:

1. Concrete geometry should be taught incidentally and briefly in a series or lessons in the grades. If the classes have not had this previous training the first five or six weeks in plane geometry should be devoted

to concrete, inductive work similar in character to Spencer's Inventional Geometry. During this period let the emphasis be placed upon acquisition of the concepts, notation, and nomenclature of geometry, rather than upon rigorous proofs.

2. Throughout the course use drawing instruments at the board and upon paper.

3. Give "original" exercises almost daily. Teach general methods of analysis, such as "lines may be proved equal by showing them to be homologous parts of equal triangles."

4. Have pupils prepare summaries of facts known about particular figures: e. g. the facts known about isosceles triangles.

5. Much attention should be given to theorems having practical application. Many exercises should deal with real problems selected from surveying, architecture, drawing and design.

6. Algebraic symbolism and reasoning should be employed freely.

7. The less comprehensive theorems should be omitted; for example:

All incommensurable cases; construction of a square having a given ratio to a given square; construction of a polygon equivalent to one and similar to a second polygon; divide a line into mean and extreme ratio; construction of a regular decagon; computation of the side of a regular polygon in terms of the radius.

8. In book V, place the emphasis upon the use of the general theorems developed, giving as much of the development as the class can grasp.

9. Insist upon good form in the presentation of oral and written recitation. Half statements should not be accepted. Insist upon the quotation of full theorems as authorities on a demonstration.

Solid Geometry.

Cover the subject as outlined in any modern text. Give particular attention to the arithmetical exercises and the many applications of the subject. Many models should be constructed by the students.

An effort should be made during the course to show the many interesting relations between plane and solid geometry.

COMMERCIAL ARITHMETIC.

This subject should be taught with daily recitations for one-half year. It should be taught largely for its utility and informational value to the pupils. It should be planned with reference to the dominant interest of the class; the test to be applied to any particular subject should be: "Is this topic likely to be of any use to any member of the class?"

After making sure of any reasonable skill in performing fundamental operations discuss short methods of calculation, percentage and its application in interest, banking, stocks and bonds, discount, etc., and mensuration. Give much mental drill upon the sort of problems commonly met in daily life.

Students should be urged to take both solid geometry and arithmetic.

General Remarks.

The following books and magazines contain helpful suggestions on the teaching of mathematics and should be read by all teachers of that subject:

1. The Teaching of Elementary Mathematics. D. E. Smith.
2. The Teaching of Mathematics. J. W. A. Young.
3. School Science and Mathematics.

The following general statements of a pedagogical character may be made:

1. Teach principles, not complicated problems.

2. Spend the class time in teaching or purposeful drill, not in indiscriminate recitation or home work.

3. Insist upon good form in the presentation of all mathematics because careless work is fatal to correct mathematical thinking.

4. Inductive methods of development in both algebra and geometry should be used in the early part of the course and in teaching difficult topics. The following books will be found helpful:

1. Essentials of Method. DeGarmo.
2. The Method of the Recitation. McMurry.

It will be found desirable to adopt some of the spirit of the laboratory method of instruction of the science. Frequently let the whole class period be devoted to work. At such times the teacher will find it advantageous to give assistance mainly to the weaker members of the class. This method of individual instruction will create a most desirable spirit in the class and will produce a high degree of attainment.

TEXT-BOOKS.

Algebra:

Aley and Rothrock's Essentials of Algebra.
Beman and Smith's Academic Algebra.
Collin's Algebra.
Milne's Standard Algebra.
Schultze's Elements of Algebra.
Slaught and Lennes's High School Algebra.
Stone and Millis' Elementary Algebra.
Tanner's Elementary Algebra.
Wells' Algebra for Secondary Schools.
Wentworth's Elementary Albegra.
Young and Jackson's Elementary Algebra.

Geometry:

Beman and Smith.
Gore's Plane and Solid.
Lyman's.
Milne.

Sanders.
Schultze and Sevenoak.
Stone-Millis Plane and Solid.
Wells.
Wentworth.

Commercial Arithmetic:

Bigelow and Arnold.
Moore.
Moore and Miner.
Schenck.
Stone-Millis Secondary.
Whigam and Goodyear.

SCIENCE.

BOTANY.

Botany, like any other science, should be presented in the high school course with reference to certain general and fundamental principles that can be worked out and comprehended by high school pupils in a high school laboratory; for no doubt much harm has been done in the past, both to the science and to the pupil by attempting to make the work correspond more nearly to the elementary course in the college or university. However, plants can and should be taught in the high school as living things, from the standpoint of the general principles of form, structure and function, including adaptation to surroundings.

These topics are not to be presented as abstract or isolated subjects, such as morphology, anatomy and physiology, but from a concrete basis, and as applying to some definite plant or plant argon accessible to the pupil.

In the vast majority of commissioned high schools the work will necessarily be confined largely to the higher plants, although a few of the lower plants may be included in a year's course, as indicated in the outline following. The order in which the work of the several sections may be taken up is secondary. The equipment of the laboratory and the seasons of the year may determine very largely the sequence of topics:

Outline of a Year's Course.

1. Plant as a whole.
   Form, gross anatomy and function of:
   Root,
   Stem,
   Leaf,
   Flower,

Fruit,
Special forms and functions of root, stem and leaf.

2. A study of the cell with the aid of a microscope and text-book, either individually by the pupil or as a demonstration by the teacher, noting the important details of the structure, the chloroplasts and their great function; how cells multiply, and how the plant is made up of cells.

3. A study of the several kinds of flowers.
   a. Arrangement and gross structure.
   b. Trace out in a general way with the class how a seed is formed, demonstrating the several steps wherever possible with microscope.
   c. Principles of pollination by wind, insects etc. (Continue in spring.)

4. Seeds and seedlings.

5. Seed distribution in nature.
   Agencies and correlative structures.

6. Study of trees.
   a. Know trees by leaf and fruit.
   b. Economic uses.
   c. Shade trees.
      Those well adapted.
      Enemies of shade trees.
      Tree mending and pruning.
      Develop sentiment against tree mutilation.

7. Stems and buds.
   a. Buds. (Winter condition of trees.)
   b. Structures of dicotyledonous stem.
   c. Structure of monocotyledonous stem.

8. Lower plants—life—history.
   a. Algae. Pleurococcus. Spirogyra. Cladophora.
   b. Fungi. Yeast, Bacteria, bread mould, rust, smut, mildew, toad-stool, lichen.
   c. Liverwort or moss.
   d. Fern.

9. Further study of flowering plants.
   Identification, pollination, adaptation.
10. Some plant functions in relation to principles of agriculture. (This section may be combined with section one, especially if both are taken up in the spring.)
    a. How plants drink.
    b. How fluids move in stem and root.
    c. How plants breathe.
    d. The chlorophyll function and food making.
    e. Storage of food.
    f. How plants grow.
    g. Behavior toward gravity, light, moisture, contact, etc. (Special senses of plants.)
    h. Plant protection.
    i. Special adaptations.
       (Ecological.)
11. Tree Planting—Arbor Day.
    Beautifying of home and school premises.

Equipment.

The character and scope of desirable work under these various heads is indicated with sufficient accuracy in the various text-books in Botany on the market. Additional books recommended for this course are Atkinson's "Elementary Botany," "Elementary Botany," L. H. Bailey, Sedgwick & Wilson's "Biology," Goodale's "Physiological Botany," Arthur, Barnes and Coulter's "Handbook of Plant Dissection," Bergen's "Elements of Botany," Bower's "A Course of Practical Instruction in Botany," Strasburger, Schimper, Schenck and Noll's "Lehrbuch der Botanik," English translation.

The following articles should be found in every botanical laboratory:

Good microscopes.
Glass slides.

Cover glasses.

Razors.

Camel's hair brushes (small).

Watch glasses (flat on bottom).

Dissecting needles (self-made by forcing sewing needles into slender handles).

Fine pointed forceps.

Chemical reagents, such as iodine, glycerine, potassic-hydrate, potassic-iodine, and a few stains, such as fuchsin, cosin and safranin.

ZOOLOGY.

Assuming that one-fourth of the student's time for one year is devoted to the subject, the following scheme may be followed:

Fall and winter, a study of comparative anatomy of a series of animals, beginning with the lower types. In this the organism as a living thing may be considered, and then its parts, noting the division of the body into definite organs and systems for definite functions, and the gradual increase in complexity and efficiency of these organs and systems as the higher types are reached. Detailed outlines for the study of individual forms are to be found in Nos. 1, 2, 3, 10 and 14 of the books mentioned below. The spring may be taken up with a more detailed study of some forms familiar to the teacher. In this connection frequent excursions must be taken and especial attention paid to the variety of species found, the character differing most in the different species, the peculiar surroundings in which each lives, the peculiarities that fit each one to its peculiar home, the habits of each species, the coloration of each species as compared with its surroundings, the comparative number of individuals of each species, the difference between individuals of the same species. For this purpose Nos. 7 and 8 of the books given below will be found useful: Nos. 2, 4, 5, 6, 7, 8, 11 and 15 books mentioned below should

be accessible in the laboratory. Each student should be supplied with 1, 2, 3, 10 or 11.

Each laboratory should secure through the Congressman of the district the publications of the Agricultural Department on noxious and beneficial plants, birds, mammals and insects.

1. Studies of Animal Life. Walter, Whitney & Lucas.
2. Elementary Zoölogy, Davenport.
3. Elementary lessons in Zoölogy, Needham.
4. Elementary Biology, Parker.
5. Invertebrate Morphology, McMurrich.
6. Comparative Anatomy of Vertebrates. Wiedersheim.
7. American Insects, Kellogg.
8. Manual of Vertebrates, Jordan.
9. Comparative Zoölogy, Kingsley.
10. Invertebrate and Vertebrate Zoölogy, Pratt.
11. Jordan & Kellogg's Animal Life.
12. French's Animal Activities.
13. Kellogg's Elementary Zoölogy for High Schools.
14. Zoölogy Descriptive and Practical. Colton.
15. Hertwig's Manual of Zoölogy, Kingsley.
16. Parker & Haswell, Text-Book of Zoölogy.

The laboratory should be well lighted with table space of $2\frac{1}{2} \times 1\frac{1}{2}$ feet for each student, and should contain two compound microscopes, five dissecting microscopes, one scalpel, one pair of scissors, one pair of forceps, one blow pipe, hand lens and mounted needles.

Marine animals for class use may be obtained of the Marine Biological Laboratory, Woods Hole, Mass.

Alcohol may be purchased for schools at about 50 cents per gallon. Application should be made to some distillery to set aside ten gallons or more for withdrawal, duty free. A bond must be given for twice the amount of the tax of the alcohol to be so withdrawn. Printed instructions may be secured from the nearest collector of internal revenue.

PHYSICS.

It is recommended that this science be omitted from the high school curriculum rather than intrust its presentation to a teacher who has not had at least one year's work in Physics, in a college having a good physics laboratory. If physics cannot be taught well, substitute for it a science that can be. It makes not so much difference *what* is taught, as *how* it is taught.

Where conditions permit, the work in physics should consist of two parts: (a) Recitation work based on a good text-book and illustrated by experiments—chiefly qualitative experiments performed by the teacher and, in some cases, repeated by the pupil; (b) Laboratory work in which the pupils perform the experiments and the experiments are largely quantitative. Where time and room are somewhat limited the two kinds of work may be done in conjunction. It is the sense of the State Board of Education that the course in physics should emphasize the explanation of natural phenomena in a manner which can be appreciated by high school pupils of average ability, and that the course should not overemphasize the mathematical aspects of the subject. Do not discourage the class by much problem solving. Omit the laboratory work if you do not have laboratory equipment, but *do not attempt to teach the subject without illustrative apparatus.*

List "A" represents the minimum of equipment. Lists "B" and "C" should be added as soon as possible:

List A.

(For an appropriation of $100.)

Two meter sticks.
Adhesion disk.
1 doz. Prince Rupert drops.
Brass ball 1½ in. diameter.
Wood ball 1½ in. diameter.

Lead ball 1½ in. diameter.
3 English and Metric balances.
1 Harvard trip balance.
Support and pans for balance.
1 boss of brass weights, 500 gr.
1 set of universal weights.
1 air pump and compressor.
1 receiver plate.
1 bell jar, open.
1 Boyles law tube.
1 barometer tube, straight, sealed.
5 lbs. of mercury.
5 lbs. assorted glass tubing.
12 feet 3-16 inch rubber tubing.
Cork borers.
1 gross assorted corks.
Hydrometer for heavy liquids.
Hydrometer for light liquids.
2 hydrometer jars, 12 in. by 2 in.
Double scale thermometer, etched, 300 degrees.
Double scale thermometer, etched, 100 degrees.
Lodestone.
Pair of 8-inch bar magnets.
Horseshoe magnet, 6-inch.
1 lb. iron filings.
Helix and ring.
Magnetic needle, agate cap.
Friction rod, wax.
Friction rod, glass.
2 friction rods, hard rubber.
Electroscope.
Pith balls and cord.
Wimhurst machine, 8-inch.
Electrophorus disk and plate.
Proof plane.
2 gravity cells.
Dry cell.
Primary and secondary coil.

Dissectible motor.
Decomposition of water apparatus.
Telephone receiver.
Telephone transmitter.
Lecture table, demonstration galvanometer.
Resistance box.
Electric bell.
Brass wire spiral spring.
Adjustable tuning fork.
Concave and convex mirrors.
2 prisms, equilateral, 4-inch.
1 mounted lens, 5-inch.
1 set of demonstration lenses.
Iceland spar.
2 retort stands, 3 rings each.
1 clamp.
2 Bunsen burners.
1 soldering outfit.
1 double scale graduate, 500 cc.
1 lb. double cotton covered office wire, No. 18.
Tin cups, glasses, chemicals and other supplies, to be purchased of local dealers as needed.

List B.

(For an appropriation of $150.)

Items of List A.
Ball-bearing rotator.
Centrifugal ring to fit rotator.
Balls, unequal weight, on frame.
Glass globe for rotator.
Crovas disk.
Siren disk.
Color disk.
Manometric flame apparatus.
Specific gravity bottle, adjusted.
Dipping needle.
Dissectible Leyden jar.
Fuller cell complete.
Mechanical power apparatus.

Seven in one apparatus.
Stop cock, both ends for tubing.
Air thermometer tube.
Sympathetic forks and hammer.

List C.

(For an appropriation of $250.)

Items of Lists A and B.
Micrometer caliper, 1-5 cm.
Collision balls, on frame.
Second law of motion apparatus.
Inclined plane.
Harvard apparatus for latent and specific heats.
Pair of parabolic reflectors.
Palm glass.
Chaladni plates, large size.
Sonometer, with weights.
C tuning fork, mounted, without hammer.
A tuning fork, mounted, without hammer.
Tourmaline tongs.
Porte Lumiere.
Optical disk, including refraction tank.
Geissler tube.
Tangent galvanometer, complete.
Wheatstone bridge.
Wireless telegraph outfit, complete, including large size induction coil.

Balance of $250 to provide blinds for darkening the room, apparatus case, etc.

If room is not situated so that sunlight can be reflected into it, omit the porte lumiere and optical disk from the above list.

If building is not supplied with gas, omit Bunsen burner and buy a gasoline blast lamp.

If laboratory work is arranged for and the class is large, it will be necessary to duplicate such pieces as meter sticks, balances, weights, cells, galvanometers, resistance boxes, etc.

Library Reference Books.

Mann and Twiss, Physics.

Gage, Principles of Physics.

S. P. Thompson, Elementary Lessons in Electricity and Magnetism.

Thompson, Light, Visible and Invisible.

Lodge, Pioneers of Science.

Ganot, Physics.

Houston & Kennedy, Electricity Made Easy.

Duncan, The New Knowledge.

Hopkins, Experimental Science.

Hanchett, Alternating Currents.

Fournier, The Electron Theory.

Watson, Text-book on Physics.

Field, Story of the Atlantic Telegraph.

Ives, Flame, Electricity and the Camera.

Whitham, Recent Developments of Physical Science.

The text-book should be selected with reference to the equipment of the laboratory, age of pupils, time given to the subject, and the preparation of the teacher. The following are a few of the many good text-books that might be named:

Carhart and Chute, Text-Book on Physics.

Crew & Jones, Elements of Physics.

Culler, Text-book of Physics.

Hoadley, Physics.

Millikan and Gale, First Course in Physics.

CHEMISTRY.

The study of chemistry, accompanied by individual experimental work by the pupil and demonstrations by the teacher, provides excellent training in observation and a useful knowledge of important natural and industrial processes, as well as in logical thinking. The aim of the course in the high school should be mainly to secure an understanding of fundamental principles and the development of the powers of ob-

servation, deduction and expression. The pupil should not be led to think that he is being trained in the practice of analytical chemistry.

The course should include the study of a suitable text, accompanied by experiments done by the pupil to show the method of preparation and the properties of various substances. These should be supplemented by demonstrations by the teacher, showing the quantitative relations concerned in some fundamental reactions. The pupil may thus become familiar by observation with the experimental evidence of the more important quantitative laws, and thus realize that our present theories have been deduced from and are not the causes of the facts observed.

With this in view, most of the time commonly devoted to qualitative analysis may well be given to more thorough work in general chemistry. Analytical work in the high school, unless under the guidance of a very exceptional teacher, is limited in its instructional value and has little direct application unless supplemented by more advanced study and practice.

Not less than one year should be given to the study even in its elementary outline. Three recitations and two laboratory periods per week is a desirable arrangement. Very little is gained from a course in chemistry without laboratory work. Unless a high school can afford a fairly good equipment for laboratory work chemistry had better not be taught at all. Work tables, with gas and water attachments and a complete supply of materials and apparatus needed for the course should be provided. To put a heavy burden upon the instructor by placing him under the necessity of spending half of his time in devising apparatus out of a lamentable scarcity of material is unfair to student and instructor.

The text-books on chemistry, intended for use in high schools, contain complete lists of the supplies required for the course. It is always best to furnish

each student with as complete an outfit as possible, and to hold him responsible for the same. A list of the supplies needed should be sent to a number of firms for quotation on prices. In ordering any piece of apparatus a certain form in some catalogue should be designated; otherwise it will be impossible to compare prices.

The following are some of the most recent texts which are best adapted to high school work:

An Elementary Study of Chemistry, McPherson & Henderson.

Godfrey's Elementary Chemistry and Godfrey's Laboratory Manual.

Briefer Course in Chemistry, Remsen.

Davis's Chemistry for Schools.

Experimental and Descriptive Chemistry, Newell.

Elementary Principles of Chemistry, Young.

Essentials of Chemistry, Hessler & Smith.

Greene and Keller, Lessons in Chemistry.

Newth's Elementary Chemistry.

PHYSICAL GEOGRAPHY.

It is recommended that the work in Physical Geography occupy not less than three, and if possible, five exercises per week throughout one year, and that it be given in the latter part of the high school course. This work should include a brief study of the earth as a member of the Solar System—its form, motions, dimensions, and relations to the other members of the system. While this part of physical geography usually precedes the study of the surface features of the Globe, it would be studied with more interest and success at a later period. The study of the surface of the earth should include a consideration of the lithosphere (land surface), atmosphere and hydrosphere (the ocean). The study of the land surface should include a consideration of the following: Re-

lief features, work of the atmosphere, of running water and ground water, snow and ice, lakes, vulcanism, crustal movements, etc. This part of the course should be given in the fall or spring of the year in order that it may be accompanied by field work. Illustration of the subject by field work, rather than by laboratory work, should be undertaken wherever possible. The study of the atmosphere should include consideration of the composition and constitution of the air, its temperature, moisture, pressure and circulation, and the study of weather and climate; all based on daily instrumental observations, preferably in the winter months. The daily weather maps may be obtained from the Indianapolis Station without charge. The study of the Ocean should include the form, extent and depth of the ocean basins, nature and composition of sea water; and movements of the ocean, including tides, currents and waves.

The bearing of the various parts of the subject on biologic, economic and sociological questions should be kept in mind and duly emphasized. If time permits, it is well to study in some detail, toward the end of the course, the geography of some selected region or regions with a view especially to pointing out these relations between the physical environment and its plant, animal and human inhabitants.

Such a course as outlined above may be based on any one of the following text-books, which are given in their alphabetical order:

Davis, "Physical Geography."

Davis, "Elementary Physical Geography."

Dryer, "Lessons in Physical Geography."

Fairbanks's "Practical Physiography."

Gilbert and Brigham's "Introduction to Physical Geography."

Hopkins' Physical Geography.

Salisbury's "Physiography" (briefer course).

Tarr's "New Physical Geography."

The following list of reference books includes standard text-books of Geology and Geography, and a number of more or less popular treatises on special topics:

Chamberlain and Salisbury's "Geology" (three volumes).

Dana's "Manual of Geology."

Geikie "Text-book of Geology" (two volumes).

Scott's "An Introduction to Geology."

Salisbury's "Physiography" (advanced course).

Powell and others, "Physiography of the United States."

Shaler and Davis, "Illustrations of the Earth's Surfaces."

Shaler's "Aspects of the Earth."

Geikie, "Fragments of Earth Lore."

Geikie, "Earth Sculpture."

Dryer's "Studies in Indiana Geography."

Russell, "Lakes of North America;" "Rivers of North America;" "Glaciers of North America;" "Volcanoes of North America."

Brigham's "Geographic Influences in American History."

Semple's "American History and Its Geographic Conditions."

Marsh's "The Earth as Modified by Human Action."

Toothaker's "Commercial Raw Material."

Herbertson's "Man and His Work."

Coulter's "Plant Relations."

Kellogg's "Animal Relations."

Davis's "Elementary Meteorology."

Waldo's "Elementary Meteorology."

COMMERCIAL GEOGRAPHY.

The course in Commercial Geography is essentially and fundamentally a study of the relationship between man's activities and his environment. It is an exposition of the extent to which he more or less suc-

cessfully wrests from his surroundings satisfaction of his economic needs; it shows the modifying effects of man's activity upon his environment and reveals the restrictions placed upon him.

Commercial Geography makes use of or gives the pupil instruction along the following lines:

(a) A comprehension of the subject-matter of physical geography—best obtained by a prior study of physiography; otherwise time must be devoted to the study of environment, not relationship.

(b) A study of the "raw materials of commerce" is essential. This should not be confined to "book-study" but should follow the lines of laboratory work, and collections of such materials made. This collection can be purchased outright, or it can be made by the co-operation of teacher and pupils, time and energy taking the place of funds. The collection should embrace samples of raw material, material in various stages of manufacture, photographs of operations and descriptive articles. (Upon application, the Secretary of the Philadelphia Museum, Philadelphia, Pa., will mail a very instructive catalogue describing commercial collections.)

(c) To realize the extent to which these raw materials and their finished products enter into commerce, teach the pupil to use intelligently the government publications. Many may be had for the asking, especially by writing to your congressman, others can be had at a very small outlay. (Write to the Superintendent of Documents, Washington, D. C., for monthly catalogue of publications.)

Properly done, this reference work will develop in pupils the power and desire to seek information first hand from the authorities on the subject, and will also impress upon him the Government's desire to co-operate in the activities of every-day life. The use of statistics should be a means to an end, and not an end in itself.

(d) Compare the countries, their products, especially the extent of the distribution of the products, facilities of transportation, etc. A general view of the principles involved in transportation should be given; show specifically how the problem is being met in our own country.

(e) Many other points will be noted which can not be mentioned here. But in all the work, individualize the different countries, seek the prominent traits and characteristics of the people, historically, socially, industrially, politically, for the purpose of stimulating interest in the human element.

Text-Books.

Adams, "Commercial Geography."
Adams, "Elementary Geography."
Gannett, "Garrison," Houston.
Redway, "Commercial Geography."
Robinson's Commercial Geography.
Trotter's "Geography of Commerce."
Best single volume for reference—"International Geography," edited by Mills.

GEOLOGY.

It would be far better for the student and the school not to attempt to teach Geology than to give a disconnected and poorly balanced course. In case, however, it is thought desirable to include this subject, it is recommended that it be taught either in connection with Physical Geography, or that the physiographic phases of Geology be emphasized. It should be given in the latter part of the high school course; and for at least one term of daily work, or throughout the year, if given as a two-hour course. The work should be as largely observational as possible. Field work in the vicinity of the school is nearly always possible and should be considered as an essential part

of the work, and as more valuable than either class or laboratory exercises.

The high school course in Geology may preferably be based on some standard text-book, such as Norton's "Elements of Geology," or Scott's "Geology," or Brigham's "Geology," or Tarr's "Elementary Geology."

As reference books on Geology the following are recommended:

Chamberlain and Salisbury, "Geology." Three volumes.

Dana, "Manual of Geology."

Geikie, "Geology." Two volumes.

Shaler, "Story of Our Continent."

Shaler and Davis, "Illustrations of the Earth's Surface."

Shaler, "Sea and Land."

Russell, "Volcanoes of North America."

Russell, "Rivers of North America."

Russell, "Glaciers of North America."

Russell, "Lakes of North America."

Salisbury, "Physiography." Advanced course.

Powell and others, "Physiography of the United States."

Shaler, "Aspects of the Earth."

The topographical sheets and folios of the United States Geological Survey will also be found very useful in carrying out laboratory work in map study.

SUGGESTIVE COURSE IN AGRICULTURE FOR HIGH SCHOOLS.

AGRICULTURAL BOTANY.—Agricultural Botany should differ from the regular course in botany only in the respect that common agricultural seeds, plants, and materials should be used, and the principles of the subject given a practical application. A study should be made of the structure, character, and classification of the seeds, roots, stems, and leaves of corn, wheat, oats, beans, pumpkins, lettuce, carrots, beets, peas, clover, alfalfa, timothy, blue grass, raspberry, strawberry, couch or quack grass, Canada thistle, common thistle, burdock, plantain, etc. Collect, press, mount, name, classify, and preserve specimens of weeds and plants found in the community. Collect, name, classify and preserve seeds of obnoxious weeds and other plants of the community. Study methods of eradication of obnoxious weeds, giving attention to the way the plant is propagated.

DRAWING — FARM BUILDINGS. — In this course the general instruction should be similar to that given in mechanical drawing, using for subjects the home, farm, or grounds, farm buildings, etc. A drawing of the home farm should be made showing location of buildings, garden, orchard, well, fences, gateways, roads, etc. Plans for improvement in the arrangement should be required. The student should draw the front, side, and end views, together with floor plans of the barn, hog house, and poultry house, on their home place or in the neighborhood. After some practice, draw some views of the dwelling house. Exact measurements should be required and drawing done to a scale. Later the student should design and draw plans for a modern home, a dairy barn, horse barn, grain barn, hog house, and poultry house.

Soil Physics.—Soil Physics should follow the general lines followed in general Physics, except that soils should be used in giving illustrations and making experiments. Especially should the percolation, capillary attraction, evaporation, absorption and radiation of heat, influence of color on temperature, circulation of air through soils, effect of humus and lime on adhesiveness, etc., be studied in connection with clay, sand, and muck. Determine organic matter in clay, sand, muck, and loam by burning.

Horticulture. — Under this subject should be studied the products of the garden and orchard, and landscape gardening. Lectures and practical exercises that treat of the principles of plant propagation, including the operation involved in grafting, budding, layering, pruning and thinning; selection of varieties, care and cultivation of orchards and small fruits; planting and cultivation of vegetables for home use should be given. Give attention to adaptation of varieties now growing in the vicinity. A study of injurious insects, scales, and diseases, with treatments, should be made. Secure specimens of San Jose scale, black knot, maple cottony scale, peach leaf curl, apples affected with bitter rot, peaches affected with brown rot. Study remedies for same. Exercises in the making of spray mixtures should also form a part of the course.

Animal Husbandry.—The course in Animal Husbandry should include a study of the live stock of the farm, their care, feeding, and management. Study the origin, history of the development, and breed characteristics of the important breeds of horses, cattle, sheep and swine. Study feeds and their uses. Score individual animals and groups of common classes of beef cattle, dairy cattle, horses, sheep and swine. Attempt to make clear why certain points on score cards are more important than others. Also study the breeds and types of poultry and the methods of hous-

ing and feeding for growth and egg production. Score individuals and groups of several breeds of poultry.

Farm Crops.—In the study of farm crops a collection should first be made of the seeds and plants of all the common farm crops; corn, wheat, oats, clover, alfalfa, timothy, soy-beans, cow-peas, etc. This should be followed with a study of the characteristics, culture, and uses of each crop. Make a study of rotations now in use in the vicinity and possible improvements in same. Note kind of fertilization needed for each crop. Also study varieties of the several crops in the vicinity and those which might be introduced. Diseases and insects affecting farm crops and the method of holding them in check. Collect, name, classify, and preserve samples of oat smut, wheat smut (loose and stinking), corn smut, potato scab, rusts of oats, etc. Study life history of each, together with methods of control. Where manufactured products of these crops can be obtained, a study of same should be made.

Judging Farm Crops and Grains.—This work consists of scoring and grading grains and testing seeds for germination and purity.

Agricultural Chemistry.—General Chemistry should be the basis of the year's work. During the latter part of the year give some attention to the composition of plant and animal bodies; value of clover as a fertilizer; principles of manuring; the use of commercial fertilizer, etc.

Dairying.—Under this subject should be studied the composition and properties of milk; the care of milk and milk products; the Babcock test; the cream separator; the ripening and churning of cream; the working and packing of butter; the judging of dairy cows; the feeding and management of the dairy cow and the relation of dairy farming to the maintenance of soil fertility.

REFERENCE BOOKS.

Agricultural Botany.

Agricultural Botany. John Percival. Duckworth & Co., London, Eng.

Plant Studies. Coulter. Appleton Co., Chicago.

Plant Relations. Coulter. Appleton Co., Chicago.

Soil Physics.

Soils. Fletcher. Doubleday, Page & Co., Chicago.

The Soil. Hall. E. P. Dutton & Co., New York.

Soils. Lyon & Fippin. MacMillan, New York.

Physical Properties of Soil (Laboratory Manual). P. McCall. Orange Judd Co., New York.

Horticulture.

Garden Making. Bailey. MacMillan, New York.

Principles of Fruit Growing. Bailey. MacMillan, New York.

Pruning Book. Bailey. MacMillan, New York.

Nursery Book. Bailey. MacMillan, New York.

Vegetable Gardening. Greene. Webb Pub. Co., St. Paul, Minn.

Animal Husbandry.

Animal Breeding. Shaw. Orange, Judd Co.

Types and Breeds of Farm Animals. Plumb. Ginn & Co.

Judging Live Stock. John Craig. Kenyon Printing & Mfg. Co., Des Moines, Ia.

Feeds and Feeding. W. A. Henry, Madison, Wis.

Profitable Stock Feeding. H. R. Smith, Lincoln, Neb.

Principles of Breeding. Davenport. Ginn & Co., Chicago.

Farm Crops.

The Cereals in America. Hunt. Orange, Judd Co., New York.

Examining and Grading Grain. Lyttleton & Montgomery. Ginn & Co., Chicago.

Agricultural Chemistry.

Chemistry of the Farm. R. Warrington. Orange, Judd Co.

Soils and Fertilizers. H. Snyder. MacMillan Co.

Fertilizers. Voorhees. MacMillan.

Chemistry of Plant and Animal Life. Snyder. MacMillan.

Fertility of the Land. Roberts. MacMillan.

First Principles of Soil Fertility. Vivian. Orange, Judd Co.

Soil Fertility and Permanent Agriculture. Hopkins. Ginn & Co.

Dairying.

Testing Milk and Its Products. Farrington & Woll. Mendota Book Co., Madison, Wis.

Milk: Its Nature and Composition. C. M. Aikman. Urner-Barry, New York.

First Lessons in Dairying. VanNorman. Orange, Judd Co., New York.

Dairy Farming. Michels. Prof. Jno. Michels, Ithaca, N. Y.

Milk and Its Products. Wing. MacMillan, New York.

For Plant Diseases.

Diseases of Plants. H. M. Ward. E. & J. B. Young Co., New York.

Minnesota Plant Diseases. E. M. Freeman, University of Minnesota, St. Anthony Park, Minn.

Moulds, Mildews and Mushrooms. L. M. Underwood. Henry Holt Co., New York.

Drawing.

Barn Plans and Outbuildings. Orange, Judd Co.

Farm Buildings. Sanders Publishing Co., Chicago.

Poultry.

American Standard of Perfection. American Poultry Association, Mansfield, O.

Progressive Poultry Culture. Brigham. Torch Press, Cedar Rapids, Ia.

Poultry Breeding. Miller Purvis. Sanders Pub. Co., Chicago.

General Agriculture.

Farm Accounting and Business Methods. Jno. A. Bexell. Home Correspondence School, Springfield, Mass.

Reports of the Commission on Country Life. Sturgis & Walton Co., New York.

Elements of Agriculture. Warren. MacMillan Co.

Fundamentals of Agriculture. Halligan. D. C. Heath, Chicago.

Agriculture for Common Schools. Fisher & Cotton. Chas. Scribner's Sons, New York.

Agriculture for Young Folks. A. D. & E. W. Wilson. Webb Pub. Co., St. Paul, Minn.

Elementary Principles of Agriculture. Ferguson. A. L. Ferguson, Sherman, Tex.

Farm Accounting and Business Methods. Jno. A. Bexell. Home Correspondence School, 368 Main St., Springfield, Mass.

Chapters in Rural Progress. Butterfield. University of Chicago Press, Chicago, Ill.

Education for Efficiency. Davenport. D. C. Heath.

Agriculture, 3 vols. Brooks. Home Correspondence School, Springfield, Mass.

Rural School Agriculture. Davis. Orange, Judd Co.

Wilkinson's Agriculture. American Book Co.

MUSIC.

The vitality of a course of music in high schools is determined by three elements: First, the attitude of the students toward the subject; secondly, the musical material, and, lastly and chiefly, the teacher. Of these determining factors, the first depends largely upon the second and third. Given a supply of good music that appeals to the pupils and given also an enthusiastic and inspiring teacher, the best possible beginning has been made.

Many standard high school music books offer a good selection of material, and most publishing houses carry a good line of the right sort of supplementary music, costing only a few cents a copy.

Generally speaking, music with good strong words should be selected. Avoid the commonplace both in music and words. But it must be pleasing to the pupils or they will not enter heartily enough into the work to make their music study a real means of education.

Variety in the music to be used is necessary, and this applies to each lesson; hard work can be gotten from a music class through an entire music period if the pieces offer sharp contrast with one another. Unison songs are good because they unite the class in the same melody, thus emphasizing the idea of unity. Part songs are good for a different reason. They appeal to and educate the sense of harmony and widen the musical horizon of the pupils. It will be wise to use both kinds of songs.

During the music lessons no time should be lost and the subject should not be allowed to drag. If a piece proves not to be acceptable upon any particular day, it is wise policy to quietly turn to some other more congenial song. Do not work too long upon any one

difficulty; stop when the interest stops, other things being equal. In taking up a new song, it is wise to sing it through without halting to correct mistakes. This gives the class a chance to grasp the song as a whole and to seize upon its general spirit; it also forces reading the music more into prominence, since the attention is fixed upon the rendering almost exclusively. If possible, the work should be so planned that a new song could be started in every lesson, or at least every alternate lesson.

It is of the utmost importance that the pupils be taught to keep time for themselves and not to depend upon either the teacher or their neighbors. This result may be secured by diligent work, the class counting the time of a few measures while the teacher plays. Then they should mentally feel these counts when they sing.

The voices should be kept up; the vitality and character of the voice do not appear unless the tones are placed well above the throat. This, like keeping time referred to in the last paragraph, is one of the good habits pupils should gain from their work in music. Generally speaking, when any piece is sung only indifferently well, it is largely the poor placing of the voice which is at fault.

Besides vocal music, the pupils may, under favorable conditions, become acquainted with some good standard instrumental pieces. In most high schools some of the pupils play the piano or other instruments skillfully, and the teacher will do well to have such pupils play for their fellow pupils. Some system may be brought to bear upon this work by having the class hear a few pieces several times during a school term. This is better than having a new piece played every time.

It will be well for the teacher to say a word or two, if possible, of explanation of the music or perhaps say a few words about the composer. The best results

will be obtained by keeping such work as has been outlined as informal as possible.

In conclusion it is well to emphasize the fact that it is the pupils and not the subject which should be the teacher's chief care. No teacher who understands the subject of music thoroughly will go far astray if she does not forget the pupils in her anxiety to teach the subject.

The following is a list of selections suitable for high school music, graded according to the degree of difficulty:

HIGH SCHOOL MUSIC.

Coda.

(Ginn & Co.)

Easy:

No.		
32	Spring's Bright Glances (Somnambula)	2c
293	A Sailor's Song (Harper)	3c
44	Happy and Light (Bohemian Girl)	2c
323	King of the Forest Am I (Parker)	4c
379	The Soldier's Dream, Paul Rodney	4c
256	The Old Guard	4c
34	Come to the Fair (Martha)	2c
297	The Clang of the Forge, Paul Rodney	3c
259	In the Harbor We've Been Sheltered (Martha)	3c
288	Sailing Marks	3c
43	Pretty Village Maiden (Faust)	2c
70	Away, the Morning Freshly Breaking	2c
255	Join in Pleasure (Erminie)	3c
192	Gloria from Twelfth Mass, Mozart	3c
203	Five Favorite Anthems	2c
220	Let Our Voices be Glad, Lecocq	4c
186	Gloria, Viezie	2c
341	The Forge, Watson	4c

Medium Difficult:

No.		
327	O Lord, How Manifold, Barnby	4c
221	The Lawn Party (Waltz Song), Lecocq	5c
311	Olaf Trygvason, Grieg	5c
134	Summer Morning, H. Smart	2c
61	The Vesper Bells, J. Eichberg	3c
149	Awake! Awake! the Flowers Unfold, Leslie.	2c
202	Jubilate Deo, B. Tours	2c
112	Wiegenlied, J. L. Frank	2c
99	May Day Sports, Gounod	2c

Difficult:

333	The Joy of the Hunter, Weber	4c
181	As Pants the Hart, Spohr	2c
329	Wake! to the Hunting, H. Smart	3c
275	Lady, Rise, Sweet Morn's Awaking, H. Smart.	4c
83	'Tis May Day Morn, J. L. Hatton	2c
240	The Miller's Wooing, Faning	5c
377	Day Break, Faning	6c
280	Song of Peace, Sullivan	4c
162	Heaven and the Earth Display, Mendelssohn.	3c
201	Bridal Chorus from Rose Maiden	5c

THE LAUREL OCTAVO.

(C. C. Birchard & Co., Boston, Mass.)

Easy:

No.		
141	Lullaby from Erminie, Jakobowski	3c
30	The Barefoot Boy, Johns	3c
109	Concord Hymn, Birge	3c
32	The Flag, Henry K. Hadley	4c
128	Santa Lucia	2c
16	A Merry Life, Denza	3c
25	Uncrowned Kings, Loomis	4c
134	Freedom's Banner, Harvey	
118	The Banner of the Free, Jude	

Medium Difficult:

No.		
130	O, Hush Thee, My Baby, Sullivan	2c
20	June, Schnecker	3c
140	Song of Illyrian Peasants, Schnecker	3c
37	The Flower of Liberty, Neidlinger	4c
13	The Recessional, Huss	

Difficult:

127	O, My Love's Like a Red, Red Rose, Garrett.	3c
10	O, Captain, My Captain, Edgar S. Kelly	6c
1	Beautiful Blue Danube, Strauss	
87	Honor and Arms, Handel	
72	Jerusalem (Gallia), Gounod	

THE JENNINGS COLLECTION.

(The Geo. B. Jennings Co., Cincinnati, Ohio.)

Easy:

No.		
8	It is Better to Laugh (Lucretia Borgia)	2c
79	A Rose in Heaven, Abt	2c
23	Oh! Hail Us, Ye Free, Verdi	3c
27	Praise Ye the Father, Gounod	2c
91	Soldiers' Chorus, Gounod	3c
87	Come Where My Love Lies Dreaming, Foster	2c
65	Battle Hymn, Wagner	2c
26	The God of Israel, Rossini	3c
57	Hark! the Lark, Dr. Cooke	2c

Medium Difficult:

92	Who Knows What the Bells Say? Parker	2c
58	Song for Spring, E. Silas	2c
50	Mighty Jehovah, Bellini	4c
24	The Dawn of Day, Hastie	2c
75	The Gallant Troubadour, Watson	4c
90	The Lost Chord, Sullivan	3c
67	The Morning Sweetly Breaking, Rossini	2c
49	Unfold, Ye Portals, Gounod	3c
63	Sleep, Gentle Lady, Bishop	2c
66	I Will Call Upon the Lord, Mozart	4c

Difficult:

No.		
47	Hail the Glorious Dawn (Lucia)	2c
20	Gypsy Life, Schumann	3c
14	How Lovely Are the Messengers, Mendelssohn	3c
13	He Watching Over Israel, Mendelssohn	3c
12	Be Not Afraid, Mendelssohn	3c
44	Light and Gay, Gounod	4c
86	Pilgrim's Chorus, Wagner	2c
74	Lovely June, Arditi	3c
48	Rise! Sleep No More, Benedict	3c
45	As the Heart Pants, Mendelssohn	3c
93	Zion, Awake, Costa	4c

BEACON SERIES.

(Silver, Burdett & Co.)

Easy:

No.		
141	Recessional, Boyd	2c
163	God of Our Fathers, Custance	5c
26	O, How Fair, Romberg	3c
82	The Lord is Great. Mendelssohn	4c
38	Wanderer, Schubert	3c
53	Men of Harlech	3c
230	The Heavens Resounding, Beethoven	3c
76	Prayer During Battle, Hummel	3c
40	Lovely Night, Chwatel	3c
118	Joy, Joy, Freedom, Benedict	6c
120	The Banner of the Free, Richards	4c

Medium Difficult:

45	O Lord, Most Merciful, Concone	3c
151	The Quietude of Night (Cavalleria Rusticana), Mascagni	4c
150	Marching Along, Stanford	5c
234	Summer Fancies (Waltz), Metra	5c
	Damascus Triumphal March, Costa	6c
75	Song of the Vikings, Faning	3c

Difficult:

No.		
106	Heavens Are Telling, Haydn	6c
23	The Water Lily, Gade	3c
237	Estudiantina, Lacone	5c
96	County Fair Waltz, Abt	6c
14	And the Glory of the Lord (Messiah)	5c

High School Music Books and Song Collections.

Beacon Song Collection No. 1. Silver, Burdett & Co.

Beacon Song Collection No. 2. Silver, Burdett & Co.

The Euterpean. Silver, Burdett & Co.

The Fourth Modern Music Reader. Silver, Burdett & Co.

The Laurel Song Book. C. C. Birchard & Co.

Natural Advanced Music Reader. (American Book Company.)

Part Songs and Choruses for High Schools. (American Book Company.)

Corona Song Book. (Ginn & Co.)

The Complete Music Reader. (D. C. Heath & Co.)

Cantatas.

King Rene's Daughter, Women's Voices, Smart. (Beacon, Series, Silver, Burdett & Co.)

The Norman Baron, Auderton. (Beacon Series, Silver, Burdett & Co.)

The Building of the Ship, Labee. (Beacon Series.)

The Lady of Shalott, Women's Voices, Bendall. (Natural Course Leaflets.) American Book Company.

DRAWING.

The first essential in the teaching of drawing is a teacher who has been well trained in the subject. Such training should have been had in a good art school.

The board makes the suggestion that it is advisable for the smaller towns and cities situated in the same territory to unite in the employment of a teacher or director of drawing. In this way a really competent and trained teacher of the subject can be secured.

Two suggested courses follow:

Course I.

FIRST HALF OF YEAR.

1. Drawing and painting of plant studies.
2. Drawing of objects singly and in groups — in outline and limited tone values.
3. Study of the principles of perspective. Drawing in outline.

SECOND HALF YEAR.

1. Course of Study outlined for the first half year with requirement of higher standard of technique.
2. Study of the elementary principles of decorative design. Drawing and painting borders and surface patterns.

Course II.

FIRST HALF OF YEAR.

Media: Pencil, charcoal, water color, and simple craft materials.

1. Nature Study—landscape, trees, plants.
2. Elements of pictorial composition in landscape, tree and plant work.
3. Principles of perspective and their application.
4. Still life composition.

5. Decorative design:
   (a) The study of foundation principles of design in good buildings, furniture, rugs, book covers, dishes, etc.
   (b) The production of design with nature and abstract motives.
   (c) The application of design in stencilling, wood block printing or some other line of craft work.

6. The study of a few masterpieces of architecture, sculpture, and painting in connection with the civilization that produced them.

SECOND HALF OF YEAR.

1. Course of study outlined for the first half year with requirement of higher standard of technique.

2. Application of the decorative work in a line of craft work differing from that of the first half of the year.

3. Study of the figure.

PUBLIC SCHOOLS.

COMMISSIONED HIGH SCHOOLS.

Advance.
Akron.
Albany.
Albion.
Alexandria.
Ambia.
Amboy
Amo.
Anderson.
Andrews.
Angola.
Arcadia.
Argos.
Ashley.
Atlanta.
Attica.
Auburn.
Aurora.
*Avilla.
Batesville.
Battle Ground.
Bedford.
Berne.
Bicknell.
Blind Institute, Indpls.
Bloomfield.
Bloomington.
Bluffton.
Boonville.
Boswell.
Bourbon.
Brazil.
Bremen.
Bristol.
Broad Ripple.
Brook.
Brookston.
Brookville.
Brownstown.
Bunker Hill.
Burnettsville (Burnett's Creek P. O.)
Butler.
Cambridge City.
Cannelton.
Carlisle.
Carmel.
Carthage.
Cayuga.
Centerville.
Chalmers.
Charlestown.
Chesterton.
Chester Township.
Churubusco.
Cicero.
Clark's Hill.
Clay City.
Clayton.
Clinton.
Cloverdale.
Colfax.
College Corner, Ohio.
Columbia City.

*Commission expired June 30, 1911.

Columbus.
Connersville.
Converse.
Corydon.
Covington.
Crawfordsville.
Crown Point.
Culver.
Cumberland.
*Cynthiana.
Dale.
Dana.
Danville.
Darlington.
*Dayton.
Decatur.
Decker.
Delphi.
Dublin.
*Dunkirk.
East Chicago.
Eaton.
*Edinburg.
Edwardsport.
Elkhart.
*Ellettsville.
Elnora.
Elwood.
English.
Evansville.
Evansville (Colored).
Fairmount.
Farmersburg.
Farmland.
Flora.
Fort Branch.
Fortville.
Fort Wayne.
Fountain City.
Fowler.
Frankfort.
Franklin.
Frankton.
Freelandville.
French Lick.
Galveston.
Garrett.
Gary.
Gas City.
Gaston.
Geneva.
Goodland.
Goshen.
Gosport.
Grandview.
Grass Creek.
Greencastle.
Greenfield.
Greensburg.
Greensfork.
Greentown.
Greenwood.
Hagerstown.
Hamlet.
Hammond.
Harlan.
Hartford City.
Hebron.
Helt Tp. (Bono P. O.)
Hobart.
Hope.
Hopewell.
Huntingburg.
Huntington.

*Commission expired June 30, 1911.

Hymera.
Idaville.
Indianapolis—
  Manual Training.
  Shortridge.
Inwood.
Ireland.
Jamestown.
Jasonville.
Jasper.
Jeffersonville.
Jonesboro.
Kempton.
Kendallville.
Kentland.
Kewanna.
Kingman.
Kirklin.
Knightstown.
Knox.
Kokomo.
Kouts.
Ladoga.
Lafayette.
Lagrange.
Lagro.
Laketon.
Lakeville.
*Lapel.
Laporte.
Lawrenceburg.
Leavenworth.
Lebanon.
Letts.
Liberty.
Ligonier.
*Lima.
Linden.
*Linlawn (P. O. Wabash)
Linton.
Logansport.
Loogootee.
Lowell.
Lynn.
Lyons.
McCordsville.
Madison.
Madison (Colored).
Marengo.
Marion.
Markle.
Martinsville.
Matthews.
*Mentone.
Michigan City.
Middlebury.
Middletown.
*Milford.
Milroy.
Mishawaka.
Mitchell.
Monon.
Monroeville.
Montezuma.
Monticello.
Montpelier.
Mooresville.
Morocco.
Morristown.
Mount Vernon.
Mulberry.
Muncie.
Nappanee.
New Albany.

*Commission expired June 30, 1911.

New Albany (Colored).
New Augusta.
Newburgh.
New Carlisle.
New Castle.
New Harmony.
New London.
New Market.
Newport.
New Richmond.
Noblesville.
North Judson.
North Liberty.
North Manchester.
North Salem.
North Vernon.
Oakland City.
Odon.
Onward.
*Orland.
Orleans.
*Osgood.
Ossian.
Otterbein.
Otwell.
Owensville.
Oxford.
Paoli.
Parker.
Pendleton.
*Pennville.
Perrysville.
Peru.
Petersburg.
Petroleum.
Pine Village.
Plainfield.
Pleasant Lake.
Plymouth.
Portland.
Poseyville.
Princeton.
Redkey.
*Remington.
Renssalaer.
Richmond.
Ridgeville.
Riley.
Rising Sun.
Roachdale.
Roann.
Roanoke.
Rochester.
Rochester Township.
Rockport.
Rockville.
Rolling Prairie.
Rome City.
Romney.
Rossville.
Royal Center.
Royerton.
Rushville.
Russiaville.
Salem.
Sandborn.
Scottsburg.
Selma.
Seymour.
Sharpsville.
*Shelburn.
Shelbyville.

*Commission expired June 30, 1911.

Sheridan.
Shipshewana.
Shoals.
*Silver Lake.
South Bend.
*Southport.
South Whitley.
Spartanburg.
Spencer.
Star City.
State Normal High School.
*Stillwell.
Stinesville.
*Stockwell.
Sullivan.
Summitville.
Swayzee.
Sweetser.
Syracuse.
Tell City.
Terre Haute.
Thorntown.
Tipton.
Topeka.
Union City.
Union Mills.
Upland.
Valley Mills.
Valparaiso.
*Van Buren.
Veedersburg.
*Versailles.
Vevay.
Vincennes.
Wabash.
Wakarusa.
Walkerton.
Walnut Grove (Arcadia P. O.).
Walton.
Wanatah.
Warren.
Warsaw.
Washington.
Waterloo.
Waveland.
Waynetown.
*West Baden.
Westfield.
West Lafayette.
West Lebanon.
West Newton.
Westport.
West Terre Haute.
*Westville.
*Wheatfield.
Wheatland.
Wheeler.
*Whiteland.
Whiting.
Williamsburg.
Williamsport.
Winamac.
Winchester.
Windfall.
Wingate.
Wolcott.
Wolcottville.
Worthington.
Young America.
Zionsville.

*Commission expired June 30, 1911.

CERTIFIED HIGH SCHOOLS.

Alamo.
Arlington.
*Bainbridge.
Bellmore.
Ben Davis.
Bippus.
Boxley.
Bringhurst.
Brownsburg.
Brooklyn.
Bruceville.
Bryant.
Buck Creek.
Burlington.
Butlerville.
Cadiz.
Camden.
*Campbellsburg.
Cass (Hamilton P. O.).
Castleton.
Center Grove.
Charlottesville.
Chrisney.
Clarksburg.
Clark Tp. (Franklin R. R.).
Clay Tp. (Claypool P. O.).
Clear Creek.
Coesse.
Cortland.
Cory.
Cowan.
Crisman.
Cromwell.
Crothersville.
Cutler.
Deedsville.
Deer Creek.
De Soto.
Dora.
Dugger.
Dupont.
Earl Park.
Elberfeld.
Eminence.
Epsom.
Fairbanks.
Fairland.
Fayetteville.
Fisher's Switch.
Forest.
Francisco.
Fremont.
Fulton.
Gilboa.
Gilead.
Graysville.
Hamilton.
Hayden.
Hazelton.
Heltonville.
Henryville.
Hillsboro.
Huron.
Jefferson Center.
Kennard.
Keystone.
La Fontaine.
Lancaster Center.

*Certificate to expire June 30, 1911.

La Otto.
Lapaz.
Larwill.
Laurel.
Lawrence.
Liberty Center.
Lincolnville.
Lizton.
Lucerne.
Lynnville.
Mace.
Mackey.
Manilla.
*Marco.
Marshall.
Mecca.
Medaryville.
Medora.
Mellott.
Michigantown.
Milton.
Monitor.
Monroe City.
Monrovia.
Montmorenci.
Mooreland.
Morgantown.
Moscow.
Mt. Comfort.
Nashville.
Nead.
New Palestine.
New Pekin (Pekin P. O.).
New Ross.
New Salem.
Newtown.
New Washington.
New Waverly.
New Winchester.
North Madison.
Oaklandon.
Oaktown.
Oolitic.
Owensburg.
Paragon.
Patriot.
Pimento.
Pleasantville.
Prairie Creek.
Providence.
Raleigh.
Richland Center (Lake P. O.).
Rich Square (Lewisville P. O.).
*Rock Creek.
*Rome.
Rosedale.
St. Paul.
Saratoga.
Scipio.
Sidney.
Somerset.
Spencerville.
Springport.
Springville.
*Spurgeon.
Straughn.
Stone Bluff.
Switz City.
Talma.
Tangier.

*Certificate to expire June 30, 1911.

*Tennyson.
Tunnelton.
Union Tp. (Franklin P. O.).
Vallonia.
Vernon.
Wadena.
Wallace.
Washington Center.
Wawaka.
Webster.
Westland.
West Middletown.
West Point.
Westport.
West Tp.
*Whitewater.
*Williams.
*Winslow.
*Wolf Lake.
Yorktown.

*Certificate to expire June 30, 1911.

ACCREDITED HIGH SCHOOLS.

Beaver Dam
Center Tp (Rush Co.).
Clifford.
Dyer.
Elizabethtown.
Emison.
Flint.
Francesville.
Freetown.
Graysville.
Green Tp. (Randolph Co.).
Hanna.
Hardinsburg.
Harrison.
Haubstadt.
Jamestown.
Kent.
Kingsbury.
La Crosse.
Leo.
Lincoln.
Maple Grove.
Mecca.
Merrillville.
Milan Center.
Millersburg.
Moorefield.
Mt. Olympus.
*Monterey.
Mooney.
New Haven.
New Lebanon.
New Paris.
Newpoint.
Petersville.
Pleasantville.
Pulaski.
Reynolds.
Rock Creek Tp.
Ross.
Ryker's Ridge.
Sacred Heart Academy (Benton Co.).
Saltillo.
Scott.
Shelby.
Taylorsville.
Theological Institute. (Grant Co.).
*Trinity Springs.
Troy.
Waterford.
Whitestown.

*Expired June 30, 1911.

PRIVATE SCHOOLS.

(Commissioned High School Standing.)

Academy of Immaculate Conception.....Oldenburg
Bloomingdale Academy .....Bloomingdale
Central College—Academy .....Huntington
Central Normal College—Academic Department—
.....Danville
DePauw Academy .....Greencastle
Fairmount Academy .....Fairmount
Goshen Academy .....Goshen
Hanover Academy .....Hanover
Ind. Central University—Academy.University Heights
Manchester Academy .....North Manchester
Moore's Hill Academy .....Moore's Hill
Plainfield Academy .....Plainfield
Rochester Normal .....Rochester
St. Augustine Academy .....Ft. Wayne
St. Catherine's Academy .....Ft. Wayne
St. Joseph's Academy .....Tipton
St. Mary's Academy .....St. Mary's
St. Rose Academy .....Vincennes
Spiceland Academy .....Spiceland
Taylor University .....Upland
Vincennes Academy .....Vincennes
Union High Academy .....Westfield
Winona Academy .....Winona Lake

(Certified High School Standing.)

Colburn Academy .....Mulberry

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